

CLAIMS

What is claimed is:

1. A dispensing system comprising:

a dispenser comprising one or more dispensing paths for dispensing items; and

5 one or more dispensing heads, wherein each of the one or more dispensing heads receives items from at least one of the one or more dispensing paths and comprises:

a dispensing chute for directing a first plurality of the received items toward the dispenser, wherein at least one physical characteristic of each of the first plurality of the received items is within a predetermined range of physical characteristics; and

10 a diversion chute for directing a second plurality of the received items away from the dispenser.

2. The system of claim 1, further comprising one or more sensing units, wherein each of the one or more sensing units measures the at least one physical characteristic of at least a portion of the items dispensed from at least one of the one or more dispensing paths, wherein each of the  
15 one or more dispensing heads receives items from at least one of the one or more dispensing paths via at least one of the one or more sensing units, wherein the at least one physical characteristic of at least one of the second plurality of the received items is greater than or less than the predetermined range of physical characteristics.

3. The system of claim 2, wherein each of the dispensing heads further comprises at least  
20 one holding chamber, wherein the at least one holding chamber directs the first plurality of the received items to the dispensing chute, and directs each of the second plurality of the received items to the diversion chute.

4. The system of claim 3, further comprising a star wheel, wherein the star wheel comprises a plurality of container-receiving grooves for positioning containers in alignment with the one or  
25 more dispensing heads.

5. The system of claim 4, further comprising a rotation drive for rotating the star wheel.

6. The system of claim 2, wherein the at least one physical characteristic is selected from the group consisting of a volume, a weight, and a density of the plurality of items.

7. The system of claim 2, further comprising:

30 a rotation drive for rotating the dispenser; and

at least one vibration device for vibrating each of the dispensing paths, wherein a control unit controls a rotational speed of the rotation drive and a vibration of the at least one vibration device, such that the dispensing paths dispense the items singularly.

8. The system of claim 2, wherein the dispenser further comprises:

5 a feeder bowl for receiving the items and for supplying the items to the one or more dispensing paths;

a first vibration device for vibrating the feeder bowl;

a rotation drive for rotating the one or more dispensing paths; and

10 at least one second vibration device for vibrating the one or more dispensing paths, wherein a control unit controls a rotational speed of the rotation drive and a vibration of the at least one second vibration device, such that the one or more dispensing paths dispense the items singularly.

9. The system of claim 2, further comprising means for releasing the second plurality of the received items from the one or more dispensing heads.

15 10. The system of claim 9, further comprising:

a feeder bowl for receiving the items and for supplying the items to the one or more dispensing paths; and

20 means for separating the second plurality of the received items released from the dispensing head, which have the at least one physical characteristic within the predetermined range of physical characteristics, from the second plurality of the received items released from the dispensing head, which have the at least one physical characteristic greater than or less than the predetermined range of physical characteristics.

25 11. The system of claim 10, further comprising means for delivering the second plurality of the received items released from the dispensing head, which have the at least one physical characteristic within the predetermined range of physical characteristics to the feeder bowl.

12. The system of claim 11, wherein the means for separating comprises at least one strainer.

13. The system of claim 11, wherein the means for delivering comprises a conveyor.